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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/491,569	01/26/2000	Vinod Jayaraman	NTTC-0002-US	8704

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[REDACTED] EXAMINER

PHILIP, NOBEL A

ART UNIT	PAPER NUMBER
2697	3

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/491,569	JAYARAMAN ET AL.
	Examiner Nobel Philip	Art Unit 2697

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 26 January 2000.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-34 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 17 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - Claims 17 and 30 recites the limitation "the first central authority" in lines 5 and 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 5, 6, 9-15, 17-19, 24, 26, 30, 31, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Chuah (U.S. Patent No. 6,115,390).

- Referring to claims 1, 24, and 31, Chuah discloses a method usable with a wireless medium and local stations (see figure 2 – end systems 232 and wireless network 230), as well as a system with local stations and a central authority (see figure 2 – end systems 232 and base stations 236) comprising:
 - o communicating a request between one of the local stations and a central authority to reserve a time slot for transmitting from said one of the local stations (sending transmit access request to base station for reservation of time slots, col. 9 lines 54-64);
 - o using the central authority to selectively reserve the time slot based on at least in part a reservation schedule (requests are sent to scheduler, col. 10 lines 23-26); and
 - o if the central authority reserves the time slot, during the time slot, preventing the other local stations from transmitting (since the time slot is reserved for a particular station, other stations cannot transmit during that specific time slot, figure 8B – 826 and col. 17 lines 5-15).
- Referring to claim 5, Chuah further discloses the method of claim 1, wherein the local stations and the central authority form at least part of a wireless local area network (base station with end systems and a wireless local network, see figure 2 – end systems 232 and wireless network 230).

- Referring to claims 6 and 26, Chuah further discloses the method and system of claims 1 and 24, wherein communicating the request comprises: transmitting a reservation frame between said one of the local stations and the central authority (transmitting a mini-slot frame to send reservation request to base station, col. 9 lines 9-13 and figure 4).
- Referring to claims 9-14, Chuah further discloses the method of claim 1, wherein the central authority bases reservation of the time slot at least in part on underlying network properties, characteristics of the traffic to be transmitted, bandwidth already reserved for other stations, or on a policy associated with one of the stations (col. 10 lines 8-11). With respect to claims 10 and 12, the allocation based on traffic characteristics disclosed by Chuah is interpreted as allocation based on throughput.
- Referring to claim 15, Chuah further discloses the method of claim 1, further comprising: communicating between the central authority and said one of the local stations to indicate acceptance or refusal of the request (success or collision, col. 5 lines 7-14, col. 17 lines 35-38).
- Referring to claims 17, 30, and 34, Chuah discloses the method, system, and article of claims 1, 24, and 31, and communicating the reservation request with the central authority and another central authority that is associated with another cell (through mobile switching center, col. 9 lines 4-12), wherein the selective reservation by the first central authority is further based at least in part on the reservation schedule maintained by the first central authority (requests are sent to scheduler, col. 10 lines 23-26).

- Referring to claims 18 and 19, Chuah further discloses the method of claim 1, where the central authority can cancel the reserved time slot based on whether said one of the local stations did not transmit during a previously scheduled time slot (col. 20 lines 62-65).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-4, 7-8, 25, 27-28, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah (U.S. Patent No. 6,115,390).

- Referring to claims 2-4, 25, and 32, Chuah discloses the method, system, and article of claims 1, 24, and 31, where the system is able to transmit constant bit rate information (col. 4 lines 55-56, col. 10 lines 34-46), but does not explicitly disclose the transmission of real-time information, including audio and video, from one of the local stations during the timeslot. However, it is well known in the art that constant bit rate information includes real time voice and video traffic. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to transmit real-time information, including audio and video. One of ordinary skill in the art would have been motivated to do this so that there is no perceived delay in the voice and video traffic.

- Referring to claims 7-8 and 27-28, Chuah discloses the method and system of claims 6 and 26, and further discloses that the base station receives priority (priority based on connection identity, col. 12 lines 54-55, col. 17 lines 47-52), start time (start time established by base station when reservation is received, col. 14 lines 48-57), and traffic type information (data type field, col. 17 lines 54-58) Chuah does not explicitly disclose that all these are indicated in the reservation frame. Chuah discloses a short upstream reservation frame followed by a longer upstream acknowledgment frame containing more information. It is well known in the art that reservation frames can contain many kinds of information. One scenario would be to put the information contained in both frames (reservation and acknowledgment) together into one reservation frame. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to indicate a priority, start time, and traffic type in the reservation frame. One of ordinary skill in the art would have been motivated to do this so that the time slot can be reserved immediately without waiting for the local station to transmit more information thereby improving performance.

8. Claims 16, 21-23, 29, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah (U.S. Patent No. 6,115,390) in view of Belanger et al. (U.S. Patent No. 5,875,186).

- Referring to claims 16, 29, and 33, Chuah discloses the method, system, and article of claims 1, 24, and 31, where the central authority notifies the local stations of a busy time slot (sends broadcast, col. 5 lines 16-18), but does not explicitly disclose that the central authority updates a network allocation vector of each local station with the

duration of the time slot. Belanger discloses a wireless local area network where local stations have a network allocation vector which indicates the availability of the access channel (net allocation vector, col. 33 lines 26-42). This technique can be used in the system disclosed by Chuah since the central authority notifies the local stations with the availability of the access channel. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to transmit a frame from the central authority that updates a network allocation vector of each local station indicating the availability of the time slot. One of ordinary skill in the art would have been motivated to do this so that the system would work well in overlapping service areas.

- Referring to claims 21-23, Chuah discloses the method of claim 1, wherein at least some of the local stations are located within a cell that includes multiple access points (see figure 2 – 236), but does not explicitly disclose using the central authority to route the traffic through the one of the access points that has the least amount of existing traffic. Belanger discloses a wireless local area network where the mobile unit uses the best access point by using the information received from the access point (col. 2 lines 20-56). This could be implemented in the system disclosed by Chuah so that the local station can use access point with the best service quality. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to route the traffic through the one of the access points that has the least amount of existing traffic. One of ordinary skill in the art would have been motivated to do this so that the system will have a higher quality of service.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah (U.S. Patent No. 6,115,390) in view of Egawa et al. (U.S. Patent No. 5,745,694).

- Referring to claim 20, Chuah discloses that the central authority is able to cancel the reserved time slot (see rejection to claims 18 and 19), but does not explicitly disclose that the cancellation takes place after the local station transmits a cancellation request. Egawa discloses that a user can cancel a reservation request that was already granted (col. 7 lines 7-10). Since the system disclosed by Chuah can already cancel reserved time slots, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to allow the end user to submit cancellation requests. One of ordinary skill in the art would have been motivated to do this so that a timeslot would not be wasted in case the user changes his/her mind about the granted reservation.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Dorenbosch et al. (U.S. Patent No. 6,469,997) discloses a method for transmitting collision-free messages in a digital selective call signaling protocol.
- b) Eng (U.S. Patent No. 6,370,153) discloses a method and apparatus for reserving resources of one or more multiple access communication channels.
- c) Darcie et al. (U.S. Patent No. 6,493,335) discloses a method and system for providing low-cost high-speed data services.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nobel Philip whose telephone number is 703-305-8395. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 703-305-4798. The fax phone number for the organization where this application or proceeding is assigned is 703-305-3988.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

12. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, DC 20231

or faxed to:

(703) 305-3988, (for formal communications intended for entry)

Or:

(703) 305-3988, (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Nobel Philip
May 15, 2003



RICKY NGO
PRIMARY EXAMINER